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10/796,582

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EXAMINER

HALL, ASHA J

ART UNIT

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1795

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/796,582

Applicant(s)

SHINGLETON ET AL.

Examiner

Asha Hall

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 33-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 and 33-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2007 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date July 20, 2007.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 7/20/07 is a copy of the Notice of References Cited supplied by the Examiner to the Applicant filed on 5/31/07. The information disclosure statement has been placed in the application file, but the information referred to therein is already of record.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. With respect to claims 1 and 33, the Applicant has not disclose "stationary" and "fixed" in their specification in regard to the shade structure. In regard to claims 13, the Applicant fails to disclose "wire mesh" and "sheet of material" in their specification in regard to the protective panels. With respect to claims 37, the Applicant fails to disclose a "first, second, third, and fourth" and "stationary" in their specification in regard to the rows and shade structure. In regard to claims 38, the Applicant fails to disclose a "structure lengths and row lengths being

about equal" and "stationary" in their specification in regard to the rows and shade structure.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-5, 8, 12, and 33-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Shingleton (US Patent 6,058,930).

As to claims 1 and 33, Shingleton discloses a modular shade system (Figures 2A-2C, that said system is "modular" is inherent in its use of solar panels 34 that may be fixed or removed) with solar tracking panels (solar panels, 34) for use on a support surface (support surface is shown in Figure 2A as the surface to which the system is affixed via footing, 38) comprising: a series of generally North-South oriented, spaced apart torque tubes (torque tube, 32, that is North-South oriented according to the first line of the abstract), each torque tube having an axis (as shown in Figure 2A); panels mounted to at least some of the torque tubes (as instructed in column 5, lines 57-60) to create spaced-apart rows of panels along said torque tubes (that the panels are spaced apart is shown by the space between adjacent panels, 34, in Figure 13), at least some of the panels being solar collector panels (all of the panels, 34, are solar panels); a

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shade structure (this enhanced shading is provided by the panels) positioned at a selected location between selected ones of the torque tubes and above the support surface so to provide an enhanced shaded region thereunder (the panels are fixed to the torque tubes as described above); a support structure comprising: a first mounting assembly (torque arm 46, rod member 44, body portion of linear actuator 43, fixed mount 45 and bearing 40) for mounting each torque tube above the support surface for rotation about the axis of each said torque tube (mounting is shown in Figure 2A and the rotation motion is illustrated in Figure 2C) and a second mounting (footing, 38, and pier, 36) for supporting the shade structure at the selected location; and a tilting assembly as part of the first mounting assembly (actuator, 42, body portion of actuator 43, and fixed mount, 45) selectively rotating each torque tube about its axis (again, as shown in Figure 2C).

As to claim 2, the first mounting assembly of Shingleton comprises: pivot connectors (the pivot connectors between the solar cell mount and torque arm 46, are clearly visible in Figure 2B and the pivoting motion of the solar panels, 34, with respect to the first mounting assembly is demonstrated in Figures 2A-2C); Southside supports (fixed mount 45) pivotally connected to the torque tubes by the pivot connectors (it is clear from Figure 2B that 25 is pivotally connected to torque tubes 32 via the first mount assembly including the pivot connectors shown in the figure; the pivoting motion is shown in Figure 2C) ; and Northside supports (torque arm 46) pivotally connected to the torque tubes by the pivot connectors (as also shown in Figure 2B).

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As to claim 3, the Southside and Northside supports of claim 1 of Shingleton (i.e., fixed mount 45 and torque arm 46, respectively) comprise vertical posts in the representation of Figure 2A.

As to claim 4, the second mounting assembly of Shingleton comprises vertically extending posts (pier, 36) supporting East-West extending shade support bars (the torque tubes, 32, also function as East-West extending shade support bars as shown in Figure 2A).

As to claim 5, the tilting assembly of Shingleton comprises a drive element (horizontal tracker driver described in column 5, lines 64-67) associated with each torque tube, a drive element coupler operably coupling each drive element (generally horizontal rod member, 44) , and a driver (linear actuator, 42) drivingly coupled to at least one drive element (the actuator driver, 42, is coupled to 44 as shown in Figure 2A) to simultaneously rotate the torque tubes about their associated axes and simultaneously tilt the panels mounted to the torque tubes (as illustrated best in Figure 2C).

As to claim 8, that the solar panels (34) of the system of Shingleton are "attached" to the torsion tube according to teachings in column 2, lines 36-37. Such an attachment step implies that the solar cells and torsion tube are not a single, monolithic apparatus (i.e., that different solar cells may be attached to the apparatus in a "modular" fashion).

As to claim 12, the modular panels of Shingleton are solar panels (column 5, line 57) or PV panels.

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As to claims 34 and 35, Shingleton explains that the modular shade system is anchored to the "earth" via the pier footing (abstract). Shingleton further explains, in column 8 lines 41-45, that the term "earth" may mean "soils and natural surfaces" (i.e., the ground) or "building rooftop[s]" which implies that the support surface comprises a roof.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) in view of Olah (US Patent 6,399,874).

As to claims 6 and 7, the modular shade system of Shingleton meets all the limitations of claim 1 above. What Shingleton fails to disclose is that the solar collector panels comprise a light concentrator type of Solar collector panel.

Olah discloses a solar energy module that uses a Fresnel lens as a light concentrator (title and abstract as well as column 2 lines 7-10). As Olah explains in column 1 lines 25-35, such concentrators are used to "increase the electrical output" of the solar energy cell by "increasing the intensity of the sunlight" striking the cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to add the solar concentrator of Olah to the modular shade system of Shingleton in order

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to increase the electrical output of the solar cells in said system by increasing the intensity of the sunlight striking each of them. This modified shade system of Shingleton would, then, contain solar collector panels that comprise a light concentrator type of photovoltaic (PV) panel.

8. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) in view of Berman et al. (US Patent 4,663,085).

The modular shade system of Shingleton meets all the limitations of claim 8 above, but fails to include that the modular panels comprise light-transmissive panels.

Berman et al. disclose a light-transmissive solar panel in Figure 1 (transparent photovoltaic panel, 10) which may be used on a roof-top (see Figure 7) to provide transmitted light that is not used for photovoltaic conversion for other purposes such as illuminating the interior of a dwelling (abstract, last sentence). Further, the PV panels of Berman et al. (transparent photovoltaic panel, 10) are light-transmissive PV panels. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the light-transmissive solar panel of Berman et al. to the modular shade system of Shingleton in order to provide light for non-photovoltaic purposes such as illuminating the interior of a dwelling. In this modified system, the light-transmissive panels would be placed adjacent to one another (as instructed by Shingleton in Figures 9A-9C) and, since the light transmissive panels are also PV panels, the modular panels comprise PV panels and light-transmissive panels.

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9. Claims 13, 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) in view of Catella et al. (US Patent 4,611,090).

In regard to claim 13, the modular shade system of Shingleton meets all the limitations of claim 12 above, above but fails to teach protective panels mounted to opposite and covering substantially the entire the shading system subassembly opposite the lower surfaces of the PV modules protective panels comprising of a sheet of material.

Catella et al. disclose an assembly (semi-rigid support member, 10) for a structural support for a photovoltaic (PV) module in Figure 1. The construction of the assembly contains a protective panel mounted to the photovoltaic module subassembly in the form of rib stiffeners (20) and a rectangular structure (23) opposite the lower surfaces to the PV modules (as shown with a mounted photovoltaic module, 22, in Figure 4) and the PV modules are encased in a rigid metal framework such as a metal casing and a rigid transparent cover material/a sheet of material is the rigid transparent cover (col. 1; lines; 31-24). Catella et al. explain that the purpose of the protective panel is both to support the photovoltaic module (column 6, lines 65 – 8) and to “secure electrical wiring connections between the photovoltaic module and adjacent photovoltaic modules or a current collecting means” (column 7, lines 30-34). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the protective panel of Catella et al. to the modular shade system of Roderick et al. in order to both support the photovoltaic module and secure electrical wiring connections

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between the photovoltaic module and adjacent photovoltaic modules or a current collecting means.

As to claim 14, Catella et al. further explain that the semi-rigid support member (10) and the protective panel that forms a part of it may be composed of steel, aluminum, plastic (polycarbonate), etc. in column 4, lines 18-28.

As to claim 17, the protective panels of Catella et al. are perforated in the sense that they contain a total of nine holes (see Figure 1).

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930), Catella et al. (US Patent 4,611,090) as applied to claim 13 above in further view of Berman et al. (US Patent 4,663,085).

As to claim 15, the combination of Shingleton and Catella et al. above discloses all the features of claim 13. Further, the protective panels of Catella et al. have holes between the rib stiffeners (20) that permit some light to pass through as shown in Figure 1. What the combination of Roderick et al. and Catella et al. fails to provide is that the PV modules are constructed to permit some light to pass therethrough.

Berman et al. disclose a light-transmissive solar panel in Figure 1 (transparent photovoltaic panel, 10) which may be used on a roof-top (see Figure 7) to provide transmitted light that is not used for photovoltaic conversion for other purposes such as illuminating the interior of a dwelling (abstract, last sentence). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the light-transmissive solar panel of Berman et al. to the combination of Shingleton and Catella

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et al. as applied to claim 13 above in order to provide light for non-photovoltaic purposes such as illuminating the interior of a dwelling.

11. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930), Catella et al. (US Patent 4,611,090) as applied to claim 13 above and in further view of Yamawaki et al. (US patent 6,489,552 B2).

The combination of Roderick et al. and Catella et al. discloses all the features of claim 13 above, but fails to teach that the protective panels have a lower surface protective panel surface at least substantially the entire lower protective panel surface being convex.

Yamawaki et al. disclose a solar cell module (photovoltaic cell module tile body and photovoltaic module, 1 and 6, respectively, in Figure 1A) for covering a roof board. The photovoltaic module tile body (1) acts as a protective panel for the photovoltaic module (6). As Yamawaki et al. teach in column 5, lines 1-3, said photovoltaic tile body has a recessed convex portion/the entire lower protective panel surface being convex (rectangular terminal-box storing recess, 3) which provides a space for the terminal box associated with the photovoltaic module or solar cell (6). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the recessed convex portion of the protective panel of Yamawaki et al. to the modular shade system of the combination of Roderick et al. and Catella et al. as applied to claims 8 and 31 above in order to provide a space for the terminal box associated with the solar cell.

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12. Claim 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 8 above, in view of Blieden et al. (US patent 4,153,813).

Roderick et al. discloses all the features of claim 1 above but fail to teach that the supplemental panels comprise phosphorescent panels to provide passive nighttime illumination or that the supplemental panels comprise illuminated panels.

Blieden et al. disclose a luminescent member (16) which consists of a luminescent agent capable of phosphorescence (column 1, line 33-34) that is optically coupled to a photovoltaic cell (18) in Figure 3. Blieden et al. explain that the purpose of said luminescent member is to aid in the collection of low angle incident light (column 1, lines 57-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the luminescent member of Blieden et al. to the modular shade system of Shingleton in order to aid in the collection of low angle incident light. Doing so would automatically provide passive nighttime illumination beneath the support structure of Shingleton. Finally, panels in said combination of the devices of Roderick et al. and Blieden et al. are illuminated by virtue of their inclusion of the luminescent member.

13. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) as applied to claim 33 above, in view of Morton (US Patent 6,341,451 B1).

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Shingleton discloses all the features of claim 33 above but fails to provide that the support surface comprises a vehicular parking area having parking stalls at the enhanced shaded region and the traffic regions adjacent to the parking stalls.

Morton teaches a portable garage apparatus (title) that has a roof (top wall structure, 12) that supports solar cells (see Figure 1 and solar energy panels 21,22). As Morton explains in the abstract, this structure is deal for "providing shelter to a vehicle" when the owner of said vehicle does not have a garage. As can be seen in Figure 1, this potable garage has a parking stall (portion of the floor, 13, enclosed by the walls of the structure). Further, Morton discloses the use of a ramp (26) leading to the opening of the garage "being adapted to allow a vehicle to enter the building structure" (column 3, lines 64-66). This implies that the region adjacent to the ramp (26) is a traffic region which is also adjacent to the parking stall region defined above. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the portable garage apparatus of Morton in conjunction with the roof-mounted modular shade system of Shingleton in order to provide shelter to a vehicle when the owner of said vehicle does not have a garage.

14. Claim 37 and 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shingleton (US Patent 6,058,930) and Morton (US Patent 6,341,451 B1) as applied to claim 36 above, in view of Stahl et al. (5,588,829).

With respect to claims 37, Shingleton discloses the protective panels modular shade system as applied to claim 36 above, and Shingleton discloses the rotation of multiple rows: first, second, third and fourth of said rows of panels col.1; lines: 28-35),

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but fails to disclose comprising: and first and second of said stationary shade structures located between the first and second rows of panels and between the third and fourth rows of panels, respectively.

Klintworth discloses stationary and moveable a roof tile comprised of rows (col.1; lines: 6-10) and moveable arrange rows of grates plates are arranged in their entirety or in groups on frames which are carried by vertical guides and that this arrangement modifies the movement (col.1; lines: 10-13 & 23-26). It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the stationary and moveable a roof tile of Klintworth to the protective modular shade panels of modified Shingleton in order to modify the movement of the system.

With respect to claim 38, Shingleton discloses rows of panels have row lengths and said stationary shade structures have structure lengths (Figure 9A-C), but fails to disclose the row lengths being about equal to the structure lengths, said row lengths and structural lengths extending parallel to one another and parallel to the support surface. *In Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device (see MPEP 2144.04).

Response to Arguments

Information Disclosure Statement

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15. The Applicant's information disclosure statement filed on 5/18/07 was stated to be defective, the corrected list of information disclosure statement is the Notice of References Cited by the Examiner and is already of record.

Drawings

16. Due to the Applicant cancellation of claims 19-32, the objection to the Drawings has been withdrawn.

Double Patenting

17. Applicant argues that the obviousness type double patenting rejection is not appropriate because Shingleton (US 6,058,930) is prior art. The Examiner respectfully agrees and the obviousness type double patenting rejection has been withdrawn.

Claim Rejection under 35 USC §112

18. Due to the Applicant's cancellation of claims 19-32, the 35 USC §112 rejection for claims 21-32 no longer applies.

Claim Rejection under 35 USC §102 and 35 USC § 103

19. All arguments directed toward claims 1 and 33, and dependants claims 13,14,16, and 37 & 38 respectively, as amended. Such amendments require new grounds of rejection presented above.

Conclusion

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Asha Hall whose telephone number is 571-272-9812. The examiner can normally be reached on Monday-Thursday 8:30-7:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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